1890MNRAS..50..518G

On the Variable Star U ("Nova") Orionis. By J. E. Gore.

From a reduction of all my observations of this variable star since the date of its discovery, 1885 December 13, I find the following epochs of maxima:—

1885 Dec.	13?	1889 Jan.	1
1886 „	11	1890 „	13
1887 „	30		

Treating these by the method of least squares, I find the following elements:—

$$\text{Maximum} = 1887,\ \text{Dec. } 26{\cdot}4 + 373^{d}{\cdot}6\ E.$$

As, however, it seems probable that the star had passed the maximum previous to the night of its discovery, I have thought it safer to neglect this maximum, and deduce elements from the following observation of maxima:—

1886 Dec. 11	Gore	1889 Jan. 1	Gore
„ 13	Sawyer	1890 Jan. 3	Yendell
1887 Dec. 30	Gore	„ 6	Sawyer
1888 Dec. 26	Sawyer	„ 13	Gore
„ 27·5	Yendell		

Treating these by the method of least squares, I find the following provisional elements:—

$$\text{Maximum} = 1887,\ \text{Dec. } 22{\cdot}36 + 373{\cdot}47\ E.$$

The following is a comparison between the observed maxima and those computed from the above elements:—

Observed Maxima.	Computed Maxima.	O−C. days.
1885 Dec. 13	1885 Dec. 5·42	+7·59
1886 Dec. 11	1886 Dec. 13·89	−2·89
„ 13	„ 13·89	−0·89
1887 Dec. 30	1887 Dec. 22·36	+7·64
1888 Dec. 26	1888 Dec. 29·83	−3·83
„ 27·5	„ 29·83	−2·33
1889 Jan. 1	„ 29·83	+2·17
1890 Jan. 3	1890 Jan. 7·3	−4·3
„ 6	„ 7·3	−1·3
„ 13	„ 7·3	+5·7

These elements give the date of the next maximum 1891, January 15·77.

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On the Proper Motions of Three Stars. By W. T. Lynn, B.A.

In vols. xxxi. and xxxiii. of the *Monthly Notices* I gave the proper motions, by the aid of a few then recent Greenwich observations, of three stars which had been found to have large motions. But as all three are contained in the new 10-year catalogue, it is now possible to deduce tolerably accurate values of the proper motions from Greenwich observations (all made with the same instrument and directly comparable) only. This I here proceed to do, and beg to offer the results to the Society, taking the stars in the order of right ascension.

1. The first is Lalande 21185 = W. B. (2) X. 1112. In my paper in the *Monthly Notices* for November 1872 (vol. xxxiii. p. 52), I gave the (corrected) values deducible from the places used in the two 7-year catalogues, the first of which was in both elements, the second in N.P.D. (in which element the proper motion is large) only. Adding to these the places given in the 9-year and the 10-year catalogues we obtain :—

Epoch.	R.A.	No. of Obs.	N.P.D.	No. of Obs.	Authority.
	h m s		° ′ ″		
1860	10 55 40·56	2	53 5 34·86	2	7-year Cat. (1860)
1864	...	0	53 7 9·24	2	7-year Cat. (1864)
1872	10 56 20·17	4	53 10 21·90	4	9-year Cat.
1880	10 56 46·49	5	53 13 34·61	5	10-year Cat.

The precession for 1860 is $+3^{s}\cdot349$ (diminishing to $+3^{s}\cdot344$ in 1880) in R.A. and $+19''\cdot27$ (increasing to $+19''\cdot30$) in N.P.D. From this it would seem that, as the amount of apparent change from 1860 to 1872 is $+39^{s}\cdot61$ or $+3^{s}\cdot301$ per annum in R.A., and $+4'\,47''\cdot04$ or $+23''\cdot92$ per annum in N.P.D., the proper motion deducible from a comparison between the first 7-year and the 9-year catalogues is $-0^{s}\cdot046$ in R.A. and $+4''\cdot64$ in N.P.D. Comparing the places in the first 7-year and in the 10-year catalogues (separated by an interval of 20 years) we obtain similarly a proper motion of $-0^{s}\cdot049$ in R.A. and $+4''\cdot70$ in N.P.D.

2. The second of these stars is Lalande 21258 = W. B. (2) X. 1174, of which I gave the place (corrected) from the second 7-year catalogue in the *Monthly Notices* for December 1872 (vol. xxxiii. p. 102). Tabulating this together with the places in the 9-year and the 10-year catalogues, we obtain :—

Epoch.	R.A.	No. of Obs.	N.P.D.	No. of Obs.	Authority.
	h m s		° ′ ″		
1864	10 58 42·55	1	45 46 33·67	1	7-year Cat. (1864)
1872	10 59 6·74	3	45 48 58·33	3	9-year Cat.
1880	10 59 30·54	7	45 51 26·19	6	10-year Cat.

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